UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,687	06/23/2003	Thomas C. Russell	M02A442	7982

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THE BOC GROUP, INC.
575 MOUNTAIN AVENUE
MURRAY HILL, NJ 07974-2064

EXAMINER
GAMI, TEJAL

ART UNIT	PAPER NUMBER
2121	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/601,687	RUSSELL ET AL.
	Examiner	Art Unit
	Tejal J. Gami	2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *23 June 2003*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-20* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *09 July 2004* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *23 June 2003*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by

Chaturvedi ("Substation IED communications" Chaturvedi, M.; Power Engineering

Society Winter Meeting, 2002. IEEE Volume 1, 27-31 Jan. 2002 Page(s): 596-613

vol.1).

        As to independent claim 1, Chaturvedi discloses in an industrial equipment

network for interconnecting a plurality of devices (e.g., intelligent electronic devices IEC)

(see Page 596, Summary), apparatus for permitting an associated SCADA system to be

self-configuring (see Page 600, Last Line of Second Paragraph), comprises:

        a plurality of controllers dedicated to each one of said plurality of devices (e.g.,

RTU) (see Page 598, First Full Paragraph), respectively, for providing each with control

and data functions for interacting with other of the devices in the equipment network

(see Page 598, First Full Paragraph), and other systems, and programming each

controller to provide the interconnection of its associated device with other ones of said

plurality of devices (e.g., object-oriented communications) (see Page 600, First

Paragraph);

a computer network (e.g., local area network LAN) (see Page 608);

means connected between said computer network and said plurality of

controllers (e.g., RTU), respectively, for transferring data and/or control signals between

individual ones of said plurality of controllers and said computer network at given times

(see Page 598, First Full Paragraph); and

auto-discovery means for permitting said SCADA system to both self-configure

itself relative to devices in said industrial equipment network (see Page 600, Last Line

of Second Paragraph), and to be updated relative to changes in the configuration of

said industrial equipment, and associated devices or equipment therein, including

discovering new or changed devices via communication over said computer network

(see Page 604, Second Full Paragraph for *propagation of information*; and Page 612,

Slide 53 for self-description means that every device can be interrogated to find out

what is implemented and how it is stored on-line).

As to dependent claim 2, Chaturvedi teaches the apparatus of claim 1, wherein

said plurality of controllers are each provided by a programmable logic controller (e.g.,

RTU) (see Page 598, First Full Paragraph).

As to dependent claim 3, Chaturvedi teaches the apparatus of claim 1, wherein

said transfer means is selected from the group consisting of a router, and switch (e.g.,

LAN shows redundant Ethernet hubs connected to the enterprise network through a

router) (see Page 608).

As to dependent claim 4, Chaturvedi teaches the apparatus of claim 1, wherein

said computer network consists of a local area network (e.g., LAN) (see Page 608).

As to dependent claim 5, Chaturvedi teaches the apparatus of claim 1, wherein

said auto-discovery means includes:

broadcast means for operating a controller of a given device, that has either

changed its configuration or is new to said industrial equipment network, to broadcast

over said computer network an auto-discovery protocol (e.g., object-oriented

communications) (see Page 600, First Paragraph for *object-oriented communications*;

and Page 604, Second Full Paragraph for *propagation of information*); and

server means included in said SCADA system responsive to an auto-discovery

protocol from said given device, for interrogating said controller of said given device to

access sufficient data to permit said SCADA system to update its configuration for the

given device itself and within the industrial equipment network (e.g., Inter-control Center

Communications Protocol ICCP) (see Page 602, Fourth Paragraph).

As to dependent claim 6, Chaturvedi teaches the apparatus of claim 1, wherein

said auto-discovery means includes:

server means included in said SCADA system and connected to said computer

network, for in a first mode of operation periodically polling respective controllers of all

of said plurality of devices in said industrial equipment network for any respective

changes in configuration and identification of new ones of said plurality of devices (e.g.,

propagation of information) (see Page 604, Second Full Paragraph), and in a second

mode of operation individually interrogating each responding one of said plurality of

devices for new data to permit said SCADA system to update its configuration

information (e.g., self-description means that every device can be interrogated to find

out what is implemented and how it is stored on-line) (see Page 612, Slide 53).

3.   Claims 7-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Hylden

et al. (U.S. Patent Number 6,799,080).

As to independent claim 7, Hylden discloses a method for permitting a

Supervisory Control and Data Acquisition system (SCADA) to automatically diagram the

interconnection and interaction (e.g., automatically responds by updating the SCADA

display), and changes thereto (see Figure 1; and Col. 3, Lines 48-60), between a

plurality of pieces of industrial equipment and/or a plurality of devices that may be

connected to one another and to a data network (e.g., configuration) (see Figure 1; and

Col. 3, Lines 14-35), said method comprising:

establishing a network (e.g., network 13) over which a plurality of said plurality of

pieces of industrial equipment and/or devices can selectively communicate with one

another and with a SCADA system (see Col. 5, Lines 6-18);

connecting different ones of said plurality of pieces of industrial equipment and/or

devices each to either a common controller, or each to individual dedicated controllers,

respectively, or each to a plurality of controllers, or some combination thereof (e.g., PLC

controller 8) (see Col. 5, Lines 6-18); and

programming each controller for controlling and identifying its associated piece of

industrial equipment and or device (e.g., programmable logic controller PLC application

9), and for sending data representative of the interconnection and interaction thereof

with other ones of said plurality of pieces of industrial equipment and/or devices (e.g.,

configuration), both to the latter equipment and/or devices, and to said SCADA system

over said data network (see Col. 4, Lines 27-38).

As to dependent claim 8, Hylden teaches the method of claim 7, further

including the steps of:

assigning a unique IP address to each one of said plurality of pieces of industrial

equipment and/or devices upon their request as they are connected to the network (see

Col. 6, Lines 8-21);

broadcasting onto the data network an auto-discovery protocol including the

associated IP address from each piece of equipment or device when it is added to the

network (see Col. 6, Lines 8-21), or thereafter when a change is made to its

interconnections and interaction with other of said plurality of pieces of equipment,

and/or devices (e.g., communicates via RSLinx on the state of the tag) (see Col. 9, Line

49 to Col. 10, Line 4);

acknowledging via a server (e.g., CMS server 1) (see Col. 8, Lines 21-23) of said

SCADA system the receipt of an auto-discovery request (e.g., each time a linked screen

is opened) (see Col. 9, Line 49 to Col. 10, Line 4);

transferring to said server a description of the associated piece of equipment or
device, to permit said SCADA system to configure monitoring (e.g., communicates via
RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line 4);

operating said SCADA system to automatically monitor either by polling or
receiving broadcasts from said piece of equipment or device (e.g., update) (see Col. 8,
Lines 17-57); and

programming (e.g., programmable logic controller PLC application 9) said
SCADA system to automatically update and include the associated piece of equipment
or device in a diagram identifying and showing each (e.g., configuration), and their
interaction with other ones of said plurality of pieces of equipment and/or devices (see
Col. 4, Lines 27-38).

As to dependent claim 9, Hylden teaches the method of claim 8, wherein an
extensible mark-up language (XML) is used for describing or providing information for
each one of said plurality of pieces of industrial equipment or devices, respectively (see
Col. 4, Lines 27-38).

As to dependent claim 10, Hylden teaches the method of claim 7, further
including the steps of:

assigning a unique IP address to each one of said plurality of pieces of industrial
equipment and/or devices upon their request as they are connected to the network (see
Col. 6, Lines 8-21);

programming a server in said SCADA system to periodically poll said plurality of pieces of industrial equipment and/or devices (e.g., programmable logic controller PLC application 9) (see Col. 4, Lines 27-38);

operating a controller of each polled device or piece of industrial equipment to respond to a discovery request from said server by providing a description thereof (e.g., communicates via RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line 4); and

operating said server to use the description to configure monitoring of the associated device or piece of industrial equipment, whereafter device or equipment monitoring begins (e.g., each time a linked screen is opened) (see Col. 9, Line 49 to Col. 10, Line 4).

As to dependent claim 11, Hylden teaches the method of claim 10, wherein an extensible mark-up language (XML) is used by an associated controller to describe each polled device or piece of industrial equipment (see Col. 4, Lines 27-38).

As to dependent claim 12, Hylden teaches the method of claim 7, further including the steps of:

configuring each dedicated controller for having its associated device or piece of industrial equipment interconnect and interact with selected other ones of said plurality of pieces of industrial equipment and/or devices (e.g., configuration) (see Col. 4, Lines 27-38);

operating each controller for connecting its associated device or piece of equipment to said network (e.g., update) (see Col. 8, Lines 17-57);

operating each controller and a server in said SCADA system for providing auto-discovery by the latter of each device and/or piece of equipment (e.g., communicates via RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line 4);

operating each controller to respond to a request from said server to provide both a description of the associated device and/or piece of equipment, and its interaction with other devices and/or pieces of equipment (e.g., communicates via RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line 4);

operating said server (e.g., CMS server 1), in response to the description and interaction of said plurality of devices and/or pieces of equipment, to initially establish and thereafter update a database and a user interface of said SCADA system (see Col. 8, Lines 17-57); and

operating said server to begin monitoring the associated device (e.g., communicates via RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line 4).

As to dependent claim 13, Hylden teaches the method of claim 12, wherein an extensible mark-up language (XML) is used to describe each device and/or piece of equipment, and their respective interaction (see Col. 4, Lines 27-38).

As to dependent claim 14, Hylden teaches the method of claim 12, further including in said step of operating each controller and a server in said SCADA system for providing auto-discovery (e.g., communicates via RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line 4), the steps of:

measuring the time for said server to respond to a controller of a device or piece

of equipment awaiting a reply, and indicating a network fault, and interrupting further

SCADA system processing for the associated device or piece of equipment, if no reply

is received within a predetermined period of time (e.g., timer presets...leak points) (see

Col. 8, Lines 29-41).

As to dependent claim 15, Hylden teaches the method of claim 7, further

including the steps of:

configuring each dedicated controller for having its associated device or piece of

industrial equipment interconnect and interact with selected other ones of said plurality

of pieces of industrial equipment and/or devices (e.g., configuration) (see Col. 4, Lines

27-38);

operating each controller for connecting its associated device or piece of

equipment to said network (e.g., update) (see Col. 8, Lines 17-57);

operating each controller to request a reply from a respective controller of each

selected one of other of said plurality of devices and/or pieces of equipment (e.g.,

communicates via RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line

4);

operating each controller to wait for a reply (e.g., timer presets...leak points) (see

Col. 8, Lines 29-41); and

operating a requesting controller in response to a reply from another controller to

provide the latter with data for updating a database of its associated device or piece of

equipment with identification and interconnection data associated with the device or

piece of equipment of the requesting controller (e.g., update) (see Col. 8, Lines 17-57).

As to dependent claim 16, Hylden teaches the method of claim 15, wherein

said step of operating each controller to wait for a reply (e.g., timer presets...leak

points) (see Col. 8, Lines 29-41) further includes the steps of:

measuring the time from making a request for reply to the receipt of a reply (e.g.,

timer presets...leak points) (see Col. 8, Lines 29-41); and

indicating a network fault and interrupting further processing if no reply is

received within a predetermined period of time (e.g., timer presets...leak points) (see

Col. 8, Lines 29-41).

As to dependent claim 17, Hylden teaches the method of claim 12, further

including the steps of:

operating each controller to request a reply from a respective controller of each

selected one of other of said plurality of devices and/or pieces of equipment (e.g.,

communicates via RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line

4);

operating each controller to wait for a reply (e.g., timer presets...leak points) (see

Col. 8, Lines 29-41); and

operating a requesting controller in response to a reply from another controller to

provide the latter with data for updating a database of its associated device or piece of

equipment with identification and interconnection data associated with the device or

piece of equipment of the requesting controller (e.g., update) (see Col. 8, Lines 17-57).

As to dependent claim 18, Hylden teaches the method of claim 17, wherein

said step of operating each controller to request contact from a respective controller of

each one of said plurality of devices and/or pieces of equipment (e.g., communicates

via RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line 4), further

includes the steps of:

measuring the time from making a request for reply to the receipt of a reply (e.g.,

timer presets...leak points) (see Col. 8, Lines 29-41); and

indicating a network fault and interrupting further processing if no reply is

received within a predetermined period of time (e.g., timer presets...leak points) (see

Col. 8, Lines 29-41).

As to dependent claim 19, Hylden teaches the method of claim 12, wherein

said step of operating each controller and a server in said SCADA system for providing

auto-discovery by the latter of each device and/or piece of equipment (e.g.,

communicates via RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line

4), further includes the steps of:

assigning a unique IP address to each one of said plurality of pieces of industrial

equipment and/or devices upon their request as they are connected to the network (see

Col. 6, Lines 8-21);

broadcasting onto the data network an auto-discovery protocol including the

associated IP address from each piece of equipment or device when it is added to the

network (see Col. 6, Lines 8-21), or thereafter when a change is made to its

interconnections and interaction with other of said plurality of pieces of equipment,

and/or devices (e.g., communicates via RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line 4);

acknowledging via a server (e.g., CMS server 1) (see Col. 8, Lines 21-23) of said SCADA system the receipt of an auto-discovery request (e.g., each time a linked screen is opened) (see Col. 9, Line 49 to Col. 10, Line 4);

requesting via said server a description of the associated piece of equipment or device, to permit said SCADA system to configure monitoring (e.g., each time a linked screen is opened) (see Col. 9, Line 49 to Col. 10, Line 4);

operating said SCADA system to automatically monitor said piece of equipment or device (e.g., communicates via RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line 4); and

programming said SCADA system to automatically update and include the associated piece of equipment or device in a diagram identifying and showing each, and their interaction with other ones of said plurality of pieces of equipment and/or devices (e.g., programmable logic controller PLC application 9) (see Col. 4, Lines 27-38).

As to dependent claim 20, Hylden teaches the method of claim 12, wherein said step of operating each controller (e.g., PLC) and a server (e.g., CMS server 1) in said SCADA system for providing auto-discovery by the latter of each device and/or piece of equipment (see Col. 8, Lines 17-57), further includes the steps of:

assigning a unique IP address to each one of said plurality of pieces of industrial equipment and/or devices upon their request as they are connected to the network (see Col. 6, Lines 8-21);

programming a server in said SCADA system to periodically broadcast a

discovery request poll to said plurality of pieces of industrial equipment and/or devices

(e.g., programmable logic controller PLC application 9) (see Col. 4, Lines 27-38);

operating a controller of each polled device or piece of industrial equipment to

respond to a discovery request from said server by providing a description thereof (e.g.,

communicates via RSLinx on the state of the tag) (see Col. 9, Line 49 to Col. 10, Line

4); and

operating said server to use the description to configure monitoring of the

associated device or piece of industrial equipment, whereafter device or equipment

monitoring begins (e.g., each time a linked screen is opened) (see Col. 9, Line 49 to

Col. 10, Line 4).

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to
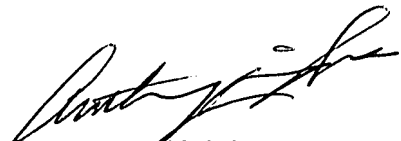
applicant's disclosure.

Osburn, III (U.S. Publication Number 2002/0147808) teaches integrated

automation system.

5.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tejal J. Gami whose telephone number is (571) 270-

1035. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Anthony Knight can be reached on (571) 272-3687. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Knight
Supervisory Patent Examiner
Tech Center 2100

TJG